

ABSTRACT

Carbonaceous insertion compounds and methods for preparation are described wherein the compounds comprise a highly disordered, impurity free, hard pre-graphitic carbonaceous host. Carbonaceous insertion compounds can be prepared which have large reversible capacity for lithium yet low irreversible capacity and voltage hysteresis. Such insertion compounds can be prepared by simple pyrolysis of suitable epoxy, phenolic resin, or carbohydrate precursors at an appropriate temperature. These insertion compounds may be suitable for use as high capacity anodes in lithium ion batteries.